

EXPRESS MAIL NO.: EL039916005US

DATE OF DEPOSIT: MARCH 31, 2000

APPLICATION FOR UNITED STATES LETTERS PATENT

FOR

SYSTEM FOR EVALUATING TREATMENT
OF CHEST PAIN PATIENTS

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now U.S. Patent No. 6,095,973,
which was a file wrapper continuation

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Department. Today, it is charged with responsibility for early recognition and treatment of patients with AMI. Another alternative is the Observation Unit. It is distinct from the Emergency Chest Pain Unit. The primary function of the Observation Unit is the early diagnosis and risk stratification of patients with underlying occult coronary artery disease.

- 5 The use of alternatives such as these reduces the cost of treating chest pain, while allowing the proper diagnosis and treatment to occur. Hospitals need a way to evaluate the performance of these alternatives to inpatient care and to compare the performance of inpatient treatment with emergency department treatment and treatment in an observation unit.

- 10 Rapid identification and treatment of patients with AMI is critical to their survival. Early intervention dramatically improves outcomes no matter what reperfusion strategy is used.

- The standardization of the evaluation and treatment of patients complaining of chest pain is an important part of improving care. The National Heart Attack Alert Program Committee, the American Heart Association, and the American College of Cardiology have made specific recommendations that result in improved outcomes. For example, a goal of thirty minutes from entry into the emergency department to treatment with thrombolytic therapy has been established by the National Heart Attack Alert Program Committee. In order to evaluate the effectiveness of these recommendations, it is important to be able to document and measure the performance of the recommendation accurately. Currently, there is no way to measure this performance objectively.
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Since rapid diagnosis and treatment of AMI are critical to patient survival, hospitals must be able to evaluate the performance of medical care providers objectively.

Adherence to treatment protocols is an important factor in this evaluation. However, there is no objective way to measure adherence currently.

In addition, failure to diagnose heart attack is the number one malpractice problem in Emergency Medicine today, accounting for almost twenty percent of all malpractice dollars paid out. Emergency chest pain evaluation is a high volume, high risk arena. An organized system-wide approach to the diagnosis of heart attack can be viewed as a risk management tool.

Therefore, it would be desirable to have a way to evaluate objectively the performance of treatment protocols and the adherence of medical care providers to the treatment protocols in the treatment of chest pain.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is a flow chart for part of a data verification procedure relating to patient arrival to ensure the validity of the patient treatment information.

Fig. 2 is a flow chart for part of a data verification procedure relating to patient symptoms to ensure the validity of the patient treatment information.

Fig. 3 is a flow chart for part of a data verification procedure relating to the date and timing of testing to ensure the validity of the patient treatment information.

Fig. 3A is a flow chart for part of a data verification procedure relating to the date and timing of testing to ensure the validity of the patient treatment information.

Fig. 4 is a flow chart for part of a data verification procedure relating to the date and timing of testing to ensure the validity of the patient treatment information.

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Fig. 5 is a flow chart for part of a data verification procedure relating to the timing and type of treatment to ensure the validity of the patient treatment information.

Fig. 6 is a flow chart for part of a data verification procedure relating to the time of disposition from the emergency department to ensure the validity of the patient treatment information.

Fig. 7A is a flow chart for part of a data verification procedure relating to the final emergency department diagnosis to ensure the validity of the patient treatment information.

Fig. 7B is a flow chart for part of a data verification procedure relating to the final emergency department diagnosis to ensure the validity of the patient treatment information.

Fig. 8A is a flow chart for part of a data verification procedure relating to the final hospital discharge diagnosis to ensure the validity of the patient treatment information.

Fig. 8B is a flow chart for part of a data verification procedure relating to the final hospital discharge diagnosis to ensure the validity of the patient treatment information.

Fig. 8C is a flow chart for part of a data verification procedure relating to the final hospital discharge diagnosis to ensure the validity of the patient treatment information.

Fig. 9A is a flow chart for part of a data verification procedure relating to the patient's primary care physician to ensure the validity of the patient treatment information.

Fig. 9B is a flow chart for part of a data verification procedure relating to the patient's cardiologist to ensure the validity of the patient treatment information.

DESCRIPTION OF THE INVENTION

The present invention is a data processing system for evaluating treatment of chest pain patients in a medical facility. The system comprises means for entering patient treatment information, means for storing the patient treatment information, means for retrieving the patient treatment information, means for comparing the patient treatment information to predetermined values, and means for reporting the comparison of the patient treatment information to the predetermined values, so that the medical facility is able to improve its treatment of chest pain patients. In addition, the system comprises means for identifying the need to provide additional training for a medical care giver or a medical facility, and means for allocating staff resources in a medical facility.

A data processing method for evaluating treatment of chest pain patients in a medical facility is also disclosed. The method comprises entering patient treatment information, storing the patient treatment information, retrieving the patient treatment information, comparing the patient treatment information to predetermined values, and reporting the comparison of the patient treatment information to the predetermined values so that the medical facility is able to improve its treatment of chest pain patients. The reported comparisons can be used to evaluate a treatment protocol, a medical care provider, or a medical facility. They can also be used to identify the need to provide additional training for a medical care provider, or a medical facility. In addition, they can be used to allocate staff resources in a medical facility.

The data processing system for evaluating treatment of chest pain patients in a medical facility of the present invention can comprise a single personal computer, a

network of personal computers connected together, or a central computer connected to a network of data entry terminals.

Information concerning patient treatment is entered into the system. Information can be entered using a keyboard or a non-keyboard method of data entry. The patient treatment information is stored in a relational database. The system processes the information as requested and compares it to predetermined values. The system prepares a report of the comparison of the patient treatment information with the predetermined values. The system uses this reported comparison to evaluate treatment protocols, individual performance of medical care providers, and overall performance of the medical facility.

The database can be created using any commercial database program, such as ACCESS[®] by Microsoft. Figs. 1 to 12 describe a data verification procedure to ensure the validity of the patient treatment information which is to be entered. Figs. 13 to 16 describe a preferred format for a relational database for the patient treatment information. Figs. 17A to 17M show typical user data entry formats of one preferred embodiment of the system of the present invention.

Patient treatment information includes data concerning the particular patient, such as name, age, doctor, cardiologist, symptoms, and time of onset of symptoms. It can also includes information concerning the testing and treatment received by the patient, such as whether and when an electrocardiogram (EKG) was done, whether and when other tests used to identify AMI were done, and when certain treatment was initiated and completed.

